

Patent Claims

What is claimed:

1. An adjustable connector on a circuit board, comprising:
 - 5 at least one leaf spring for electrically connecting said adjustable connector with said circuit board;
 - at least one opening disposed at one end of said adjustable connector; and
 - 10 at least one fastening screw, passing through said at least one opening, fixed onto said circuit board, and comprising a head, a shank portion and a threaded portion; wherein the diameter of said head is larger than that of at least one opening, the diameter of said shank portion is smaller than that of at least one opening, and the length of said shank portion is longer than the thickness of at least one opening.
- 15 2. An adjustable connector module assembled onto a circuit board, said circuit board having a plurality of pads for electrically connecting with said adjustable connector module, said adjustable connector module comprising:
 - 20 a leaf spring connector, comprising a plurality of first pins at the bottom surface thereof firmly soldered to said plurality of pads for electrically connecting with said circuit board and a plurality of leaf springs at the top surface thereof correspondingly electrically connected with said a plurality of first pins via interconnections; and

an adjustable signal connector, comprising a plurality of second pins at the bottom surface thereof against which said plurality of leaf springs correspondingly press when said adjustable signal connector is placed on the top surface of said leaf spring connector to electrically connect said adjustable signal connector with said leaf spring connector;
wherein said adjustable signal connector can keep in electrical connection with said leaf spring connector as a result of the flexibility of said plurality of leaf springs, when said adjustable signal connector makes a small movement in relation to said circuit board.

3. The adjustable connector module of Claim 2, wherein said adjustable signal connector comprising a plurality of insertions at the top surface thereof correspondingly electrically connected with said a plurality of second pins via interconnections and for receiving a plurality of signal pins of a peripheral device to electrically connect said circuit board with said peripheral device.

20 4. The adjustable connector module of Claim 2, wherein the two ends of said adjustable signal connector have a respective opening through which a fastening screw passes to delimit said adjustable signal connector on said circuit board.

5. The adjustable connector module of Claim 4, wherein said fastening screw comprises a head, a shank portion and a threaded portion; wherein the diameter of said head is larger than that of said corresponding opening, the diameter of said shank portion is smaller than that of said
5 corresponding opening, and the length of said shank portion is longer than the thickness of said corresponding opening.

6. The adjustable connector module of Claim 2, further comprising a circuit transferring plate disposed between said
10 adjustable signal connector and said leaf spring connector to electrically connect said adjustable signal connector with said leaf spring connector.

7. The adjustable connector module of Claim 6, wherein said
15 circuit transferring plate comprises a plurality of densely arranged first pin patterns at the top surface thereof at the same space as said plurality of second pins of said adjustable signal connector and a plurality of less densely arranged second pin patterns at the bottom surface thereof at the same space as aid plurality of leaf springs of
20 said leaf spring connector.

8. The adjustable connector module of Claim 7, wherein said plurality of first pin patterns are of smaller size than said plurality of second pin patterns.

9. An adjustable connector module assembled onto a circuit board, said circuit board having a plurality of pads, said adjustable connector module comprising:

5 an adjustable connector, placed on said circuit board and having a plurality of leaf springs corresponding to said plurality of pads located at the surface thereof contacting with said circuit board to produce electrical connection;

10 a wing portion, connected with said adjustable connector; and
 a frame, fixed on said circuit board and having an opening whose size is greater than that of said adjustable connector and slightly smaller than that of said wing portion; wherein said wing portion is located within said frame and said adjustable connector is through said opening.

15 10. The adjustable connector module of Claim 9, wherein the width of each of said plurality of pad is greater than that of each of said plurality of leaf springs.

20 11. The adjustable connector module of Claim 9, wherein a respective plate extends outward from the two ends of said frame and has a tapped hole.

12. An adjustable connector module assembled onto a circuit board, said adjustable connector module comprising:

a bottom plate, a plurality of pins at the bottom surface thereof fixed onto said circuit board and a plurality of pads at the top surface thereof correspondingly connected to the plurality of pins through interconnections;

an adjustable connector, placed on the top surface of said
5 bottom plate and having a plurality of leaf springs at the bottom surface thereof corresponding to said plurality of pads to produce electrical connection; and

10 a frame, sleeving said adjustable connector and fixed on said bottom plate to prevent said adjustable connector from escaping from said bottom plate; wherein a gap exists between said adjustable connector and said frame.

13. The adjustable connector module of Claim 12, wherein a respective plate extends outward from the two ends of said frame and has a tapped hole.

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14. The adjustable connector module of Claim 12, wherein a plurality of insertions at the top surface of said adjustable connector are arranged in two rows.

20 15. The adjustable connector module of Claim 14, wherein said plurality of pads corresponding to said plurality of insertions are arranged in four rows.

16. The adjustable connector module of Claim 12, wherein said plurality of leaf springs are arranged in two rows, in each of which the odd-sorted leaf springs extend outward and the even-sorted leaf springs extend inward.

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17. The adjustable connector module of Claim 12, wherein said plurality of pads are arranged in four rows and the first row and the second row of the pads are staggered.

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18. The adjustable connector module of Claim 12, wherein said plurality of pads are arranged in four rows and the second row and the third row of the pads are aligned each other.

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19. The adjustable connector module of Claim 12, wherein said frame has an rectangular opening whose size is greater than that of said adjustable connector to allow said adjustable connector to move within said opening with respect to said bottom plate.

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20. The adjustable connector module of Claim 12, wherein said frame is firmly stuck to said bottom plate by an ultrasonic fusion technology.